

## MINOR NOTICES.

**Japanese vegetation.**—Professor MIYOSHI, of the University of Tokyo, has begun the publication of photogravures of Japanese vegetation,<sup>6</sup> to represent wild and cultivated plants and plant societies. Each picture is on a separate sheet of cardboard  $20.5 \times 27$  cm, the size of the print being  $16 \times 23$  cm. Accompanying the illustrations is a descriptive text in both English and Japanese. The author has not yet determined the number of plates to be issued. So far, two parts have appeared, part I containing eight plates of cultivated and semi-cultivated plants, and part II containing eight illustrations of the vegetation of the island of Nikko.

The illustrations are well chosen and well made. Among the most effective and characteristic are the long avenues of giant mountain cherry trees, gorgeous with their spring blossoms, the graceful bamboos bending beneath their burden of winter snow, and the forest vegetation around the Hannya waterfall. The descriptive text is precise, and interspersed by interesting remarks which show that the author has an eye for color and setting.

It is to be hoped that the series may be continued to give us many more illustrations of the flora of this interesting country.—F. C. NEWCOMBE.

**A botanical cyclopedia.**—An illustrated German dictionary of botanical terms has appeared under the editorship of CAMILLO K. SCHNEIDER,<sup>7</sup> with the assistance of a number of other German botanists. This volume of almost 700 pages presents much more than a list of definitions, for there are illustrated descriptions of the morphology and minute structures of organs, of the sort one would expect to find in a cyclopedia. The terms, of course, are those employed in the German language, and the work will not take the place, for the English or American botanist, of JACKSON'S excellent *Glossary of botanic terms*.—B. M. DAVIS.

## NOTES FOR STUDENTS.

**Chemotaxis of spermatozoids.**—The chemotaxis of the spermatozoids of *Isoetes* has been studied by SHIBATA.<sup>8</sup> In *Isoetes japonica*, which was used for the study, the sporangia ripen in autumn. Microspores, sown in tap water in Petri dishes late in November, begin to germinate about the middle of January. The duration of the swarming movements of the spermatozoids is shorter than in the ferns, vigorous movements lasting only about five minutes; some movement of

<sup>6</sup> MIYOSHI, M., Atlas of Japanese vegetation. With explanatory text. Tokyo: Maruzen Kabushiki Kaisha. 1905.

<sup>7</sup> SCHNEIDER, C. K., Illustriertes Handwörterbuch der Botanik. Imp. 8vo. pp. 690. *figs.* 341. Leipzig: Wilhelm Engelmann. 1905. *M* 16.

<sup>8</sup> SHIBATA, K., Studien über die Chemotaxis der *Isoetes*-Spermatozoiden. *Jahrb. Wiss. Bot.* 41:561-610. 1905.